

What Is Claimed Is:

1. A vehicle electrical system powered by a battery to supply a plurality of loads, comprising:

an integrated module positioned between a positive terminal of the battery and the plurality of loads, the integrated module having an arrangement for detecting a state of charge of the battery, a control unit for power management of the vehicle electrical system, and at least one supply output for supplying power to the loads.

2. The vehicle electrical system as recited in Claim 1, wherein the arrangement for detecting the state of charge of the battery includes a battery current meter.

3. The vehicle electrical system as recited in Claim 1, further comprising a battery voltage sensor located outside the integrated module, wherein the arrangement for detecting the state of charge of the battery includes a battery voltage meter that cooperates with the battery voltage sensor.

4. The vehicle electrical system as recited in Claim 1, further comprising a battery temperature sensor located outside the integrated module, wherein the arrangement for detecting the state of charge of the battery includes a battery temperature meter that cooperates with the battery temperature sensor.

5. The vehicle electrical system as recited in Claim 1, further comprising:

a fuse module having an input, a plurality of supply outputs, and a plurality of fuses that connect the plurality of supply outputs to the input;

wherein a terminal of the integrated module is connected to the input of the fuse module, and wherein the plurality of

supply outputs of the fuse module provide power to the plurality loads.

6. The vehicle electrical system as recited in Claim 5, further comprising:

a switch provided within the fuse module, wherein the switch enables selective connection and disconnection between at least one of the plurality of fuses and an associated load.

7. The vehicle electrical system as recited in Claim 1, further comprising:

a plurality of fuses;

wherein the integrated module has a plurality of supply outputs, and wherein the plurality of fuses connect the plurality of supply outputs to the battery, whereby power is provided via the plurality of supply outputs to the plurality of loads.

8. The vehicle electrical system as recited in Claim 7, further comprising:

a switch provided within the integrated module, wherein the switch enables selective connection and disconnection between at least one of the plurality of fuses and an associated load.

9. The vehicle electrical system as recited in Claim 1, further comprising:

one of a battery master switch and a fuse;

wherein the integrated module has a terminal for connection to a generator, and wherein one of the battery master switch and the fuse is situated between the battery and the terminal of the integrated module.

10. The vehicle electrical system as recited in Claim 1, further comprising:

a relay;

wherein the integrated module has a terminal for connection to a starter of the vehicle, and wherein the relay is situated between the battery and the terminal of the integrated module.

11. The vehicle electrical system as recited in Claim 1, further comprising:

a communications interface for the integrated module;

wherein the control unit for power management is in contact with at least one of the plurality of loads of the vehicle electrical system and an additional control unit of the vehicle via the communications interface for the integrated module.

12. The vehicle electrical system as recited in Claim 11, wherein the communications interface is a bus interface.

13. The vehicle electrical system as recited in Claim 9, wherein the integrated module further includes an electronics unit for at least one of regulation and diagnosis of the generator.

14. The vehicle electrical system as recited in Claim 5, wherein the integrated module further includes a detection arrangement for diagnosis of a state of at least one of the fuses.

15. The vehicle electrical system as recited in Claim 7, wherein the integrated module further includes a detection arrangement for diagnosis of a state of at least one of the fuses.

16. The vehicle electrical system as recited in Claim 1, wherein the integrated module further includes a DC-to-DC converter.

17. The vehicle electrical system as recited in Claim 1, wherein the integrated module further includes at least one circuit breaker.

18. The vehicle electrical system as recited in Claim 17, wherein the circuit breaker enables selective connection and disconnection of one of a single load and a plurality of loads from the integrated module.